FORM OGC-3

MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI OIL AND GAS COUNCIL

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

RECEIVED
OCT 27 2003
MO Oil & Gas Council

☒ APPLICATION TO DRILL ☐ DEEPEN ☐ PLUG BACK ☐ FOR AN OIL WELL ☒ OR GAS WELL

NAME OF COMPANY OR OPERATOR		DATE	
Osborn Energy, L.L.C.		October 17, 2003	
ADDRESS	CITY	STATE	ZIP CODE
24850 Farley	Bucyrus	Kansas	66013

DESCRIPTION OF WELL AND LEASE

NAME OF LEASE	WELL NUMBER	ELEVATION (GROUND)
Flanary	1-24-43-32	836'

WELL LOCATION (GIVE FOOTAGE FROM SECTION LINE)
300 FT. FROM (N)(S) SECTION LINE 300 FEET FROM (E)(W) SECTION LINE

WELL LOCATION SECTION	TOWNSHIP	RANGE	COUNTY
24	T43N	R32W	Cass

NEAREST DISTANCE FROM PROPOSED LOCATION TO PROPERTY OR LEASE LINE 300 FEET
DISTANCE FROM PROPOSED LOCATION TO NEAREST DRILLING, COMPLETED OR APPLIED -- FOR WELL ON THE SAME LEASE None FEET

PROPOSED DEPTH	DRILLING CONTRACTOR, NAME AND ADDRESS	ROTARY OR CABLE TOOLS	APPROX. DATE WORK WILL START
700'	Suzie Glaze; 22139 S. Victory Rd. Spring Hill, Kansas 66083	Rotary	October 19, 2003

NUMBER OF ACRES IN LEASE: 90
NUMBER OF WELLS ON LEASE, INCLUDING THIS WELL, COMPLETED IN OR DRILLING TO THIS RESERVOIR: 0
NUMBER OF ABANDONED WELLS ON LEASE: None

IF LEASE PURCHASED WITH ONE OR MORE WELLS DRILLED, FROM WHOM PURCHASED?
NAME: New lease from land owner
ADDRESS:

NO. OF WELLS: PRODUCING 0; INJECTION 0; INACTIVE 0; ABANDONED 0

STATUS OF BOND	☐ SINGLE WELL AMOUNT $	☒ BLANKET BOND AMOUNT $ 30,000	☒ ON FILE ☐ ATTACHED

REMARKS: (IF THIS IS AN APPLICATION TO DEEPEN OR PLUG BACK, BRIEFLY DESCRIBE WORK TO BE DONE, GIVING PRESENT PRODUCING ZONE AND EXPECTED NEW PRODUCING ZONE; USE BACK OF FORM IF NEEDED.)

PROPOSED CASING PROGRAM				APPROVED CASING — TO BE FILLED IN BY STATE GEOLOGIST			
AMOUNT	SIZE	WT/FT	CEM.	AMOUNT	SIZE	WT/FT	CEM.
20'	8 5/8"	28.00	20'-Surface				
700'	5 1/2"	15.50	700'-Surface				

I, the undersigned, state that I am the Manager of Drilling Operations of the Osborn Energy, L.L.C. (company), and that I am authorized by said company to make this report, and that this report was prepared under my supervision and direction and that the facts stated herein are true, correct, and complete to the best of my knowledge.

SIGNATURE R. R. Ashlock DATE October 17, 2003

PERMIT NUMBER

APPROVAL DATE

APPROVED BY

☑ DRILLER'S LOG REQUIRED ☑ E-LOGS REQUIRED IF RUN
☑ CORE ANALYSIS REQUIRED IF RUN ☑ DRILL STEM TEST INFO. REQUIRED IF RUN
☐ SAMPLES REQUIRED
☐ SAMPLES NOT REQUIRED
☐ WATER SAMPLES REQUIRED AT

NOTE ▶ THIS PERMIT NOT TRANSFERABLE TO ANY OTHER PERSON OR TO ANY OTHER LOCATION

APPROVAL OF THIS PERMIT BY THE OIL AND GAS COUNCIL DOES NOT CONSTITUTE ENDORSEMENT OF THE GEOLOGIC MERITS OF THE PROPOSED WELL NOR ENDORSEMENT OF THE QUALIFICATIONS OF THE PERMITTEE.

I _____ of the _____ Company confirm that an approved drilling permit has been obtained by the owner of this well. Council approval of this permit will be shown on this form by presence of a permit number and signature of authorized council representative.

DRILLER'S SIGNATURE DATE

MO 780-0211 (2-88)

REMIT TWO COPIES TO: MISSOURI OIL AND GAS COUNCIL, P.O. BOX 250, ROLLA, MO 65401

RECEIVED
OCT 27 2003
MO Oil & Gas Council

FORM OGC-3

MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI OIL AND GAS COUNCIL

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

☒ APPLICATION TO DRILL ☐ DEEPEN ☐ PLUG BACK ☐ FOR AN OIL WELL ☒ OR GAS WELL

NAME OF COMPANY OR OPERATOR: Osborn Energy, L.L.C.
DATE: October 17, 2003
ADDRESS: 24850 Farley
CITY: Bucyrus
STATE: Kansas
ZIP CODE: 66013

DESCRIPTION OF WELL AND LEASE

NAME OF LEASE: Flanary
WELL NUMBER: 1-24-43-32
ELEVATION (GROUND): 836'
WELL LOCATION (GIVE FOOTAGE FROM SECTION LINE): 300 FT. FROM (N)(S) SECTION LINE 300 FEET FROM (E)(W) SECTION LINE
WELL LOCATION: SECTION 24 TOWNSHIP T43N RANGE R32W COUNTY Cass

NEAREST DISTANCE FROM PROPOSED LOCATION TO PROPERTY OR LEASE LINE 300 FEET
DISTANCE FROM PROPOSED LOCATION TO NEAREST DRILLING, COMPLETED OR APPLIED — FOR WELL ON THE SAME LEASE None FEET

PROPOSED DEPTH: 700'
DRILLING CONTRACTOR, NAME AND ADDRESS: Suzie Glaze; 22139 S. Victory Rd. Spring Hill, Kansas 66083
ROTARY OR CABLE TOOLS: Rotary
APPROX. DATE WORK WILL START: October 19, 2003

NUMBER OF ACRES IN LEASE: 90
NUMBER OF WELLS ON LEASE, INCLUDING THIS WELL, COMPLETED IN OR DRILLING TO THIS RESERVOIR 0
NUMBER OF ABANDONED WELLS ON LEASE None

IF LEASE PURCHASED WITH ONE OR MORE WELLS DRILLED, FROM WHOM PURCHASED?
NAME New lease from land owner
ADDRESS

NO OF WELLS: PRODUCING 0
INJECTION 0
INACTIVE 0
ABANDONED 0

STATUS OF BOND: ☐ SINGLE WELL AMOUNT $ ☒ BLANKET BOND AMOUNT $ 30,000 ☒ ON FILE ☐ ATTACHED

REMARKS: (IF THIS IS AN APPLICATION TO DEEPEN OR PLUG BACK, BRIEFLY DESCRIBE WORK TO BE DONE, GIVING PRESENT PRODUCING ZONE AND EXPECTED NEW PRODUCING ZONE; USE BACK OF FORM IF NEEDED.)

PROPOSED CASING PROGRAM				APPROVED CASING — TO BE FILLED IN BY STATE GEOLOGIST			
AMOUNT	SIZE	WT/FT	CEM.	AMOUNT	SIZE	WT/FT	CEM.
20'	8 5/8"	28.00	20' Surface				
700'	5 1/2"	15.50	700' Surface	OK [initials]			

I, the undersigned, state that I am the Manager of Drilling Operations of the Osborn Energy, L.L.C. (company), and that I am authorized by said company to make this report, and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct, and complete to the best of my knowledge.

SIGNATURE [signature] DATE October 17, 2003

PERMIT NUMBER: 20736
APPROVAL DATE: 10-15-03
APPROVED BY: [signature]

☑ DRILLERS LOG REQUIRED
☑ CORE ANALYSIS REQUIRED IF RUN
☐ SAMPLES REQUIRED
☐ SAMPLES NOT REQUIRED
☐ WATER SAMPLES REQUIRED AT
☑ E-LOGS REQUIRED IF RUN
☑ DRILL STEM TEST INFO. REQUIRED IF RUN

NOTE ▶ THIS PERMIT NOT TRANSFERABLE TO ANY OTHER PERSON OR TO ANY OTHER LOCATION

APPROVAL OF THIS PERMIT BY THE OIL AND GAS COUNCIL DOES NOT CONSTITUTE ENDORSEMENT OF THE GEOLOGIC MERITS OF THE PROPOSED WELL NOR ENDORSEMENT OF THE QUALIFICATIONS OF THE PERMITTEE.

I ________ of the ________ Company confirm that an approved drilling permit has been obtained by the owner of this well. Council approval of this permit will be shown on this form by presence of a permit number and signature of authorized council representative.

DRILLER'S SIGNATURE DATE

MO 780-0211 (2-88)

REMIT TWO COPIES TO: MISSOURI OIL AND GAS COUNCIL, P.O. BOX 250, ROLLA, MO 65401

FORM OGC-1

MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI OIL AND GAS COUNCIL
WELL LOCATION PLAT

RECEIVED
OCT 27 2003
MO Oil & Gas Council

OWNER: OSBORN ENERGY, LLC

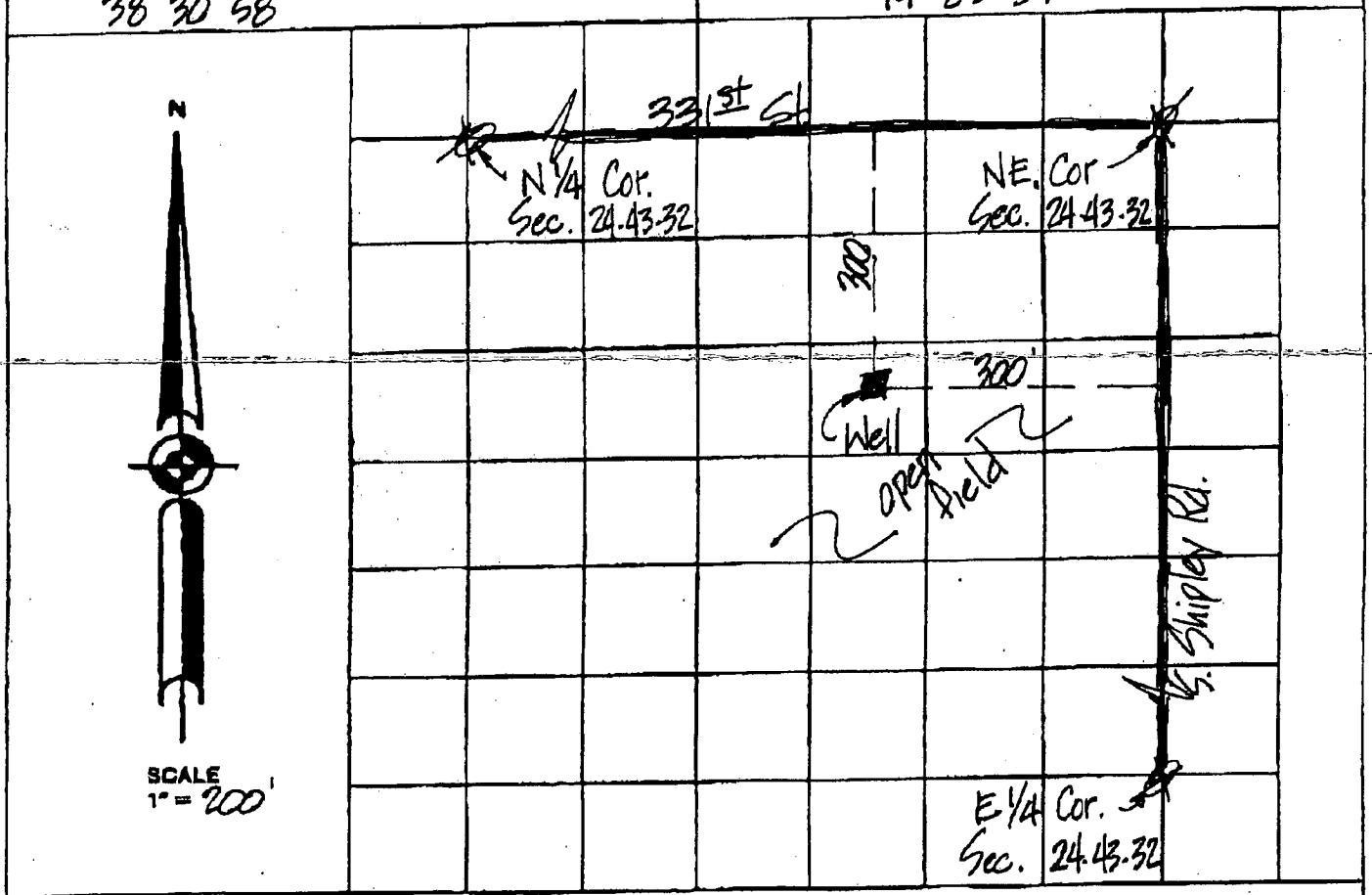
LEASE NAME: FLANARY

COUNTY: CASS

300 FEET FROM N (N-S) SECTION LINE AND 300 FEET FROM E (E-W) SECTION LINE OF SEC. 24, TWP 43N, RANGE 32W

LATITUDE: 38° 30' 58"

LONGITUDE: - 94° 23' 59"



REMARKS
- NO REASONABLE TIES AVAILABLE
- LAND OWNER: CHARLES & MARY FLANARY
33412 S. SHIPLEY RD, ARCHIE, MO 64725

INSTRUCTIONS

On the above plat, show distance of the proposed well from the two nearest section lines, the nearest lease line, and from the nearest well on the same lease completed in or drilling to the same reservoir. Do not confuse survey lines with lease lines. See rule 10 CSR 50-2.030 for survey requirements. Lease lines must be marked.

This is to Certify that I have executed a survey to accurately locate oil and gas wells in accordance with 10 CSR 50-2.030 and that the results are correctly shown on the above plat.

STATE OF MISSOURI
JOHNNY R. YAKLE
LS-2001001917
10-27-03
(SEAL)

REGISTERED LAND SURVEYOR: JOHNNY R. YAKLE

NUMBER: LS-2001001917

REMIT TWO (2) COPIES TO:
MISSOURI OIL AND GAS COUNCIL
P.O. BOX 250, ROLLA, MO 65402

TOTAL P.04

RECEIVED
FORM OGC-5
JAN 25 2010

STATE OF MISSOURI
MISSOURI DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY PROGRAM

WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

MO Oil & Gas Council

☒ NEW WELL ☐ WORKOVER ☐ DEEPEN ☐ PLUG BACK ☐ INJECTION ☐ SAME RESERVOIR ☐ DIFFERENT RESERVOIR ☐ OIL ☐ GAS ☐ DRY

OWNER	ADDRESS
OSBORN ENERGY, LLC	24850 FARLEY BUCYRUS, KS 66013
LEASE NAME	**WELL NUMBER**
Flanary	1-24-43-32

LOCATION OF WELL SEC TWN RNG OR BLOCK AND SURVEY	LATITUDE	LONGITUDE
Sec. 24 Township 43 North, Range 32 ☐East ☒West 300 ft. from ☒North ☐South 300 ft. from ☒East ☐West	N38 30'58"	W94 23' 59"

COUNTY	PERMIT NUMBER (OGC-3 OR OGC-31)
Cass	20736

DATE SPUDDED	DATE TOTAL DEPTH REACHED	DATE COMPLETED READY TO PRODUCE OR INJECT	ELEVATION (DF, RKR, RT, OR Gr.) FEET	ELEVATION OF CASING HD. FLANGE
10/19/2003	10/20/2003	unknown	836	FEET

TOTAL DEPTH	PLUG BACK TOTAL DEPTH
580	

PRODUCING OR INJECTION INTERVAL(S) FOR THIS COMPLETION	ROTARY TOOLS USED (INTERVAL) ____ TO ____ DRILLING FLUID USED air	CABLE TOOLS USED (INTERVAL)
None		

WAS THIS WELL DIRECTIONALLY DRILLED?	WAS DIRECTIONAL SURVEY MADE?	WAS COPY OF DIRECTIONAL SURVEY FILED?	DATE FILED
☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No	

TYPE OF ELECTRICAL OR OTHER LOGS RUN (JUST LOGS FILED WITH THE STATE GEOLOGIST)	DATE FILED

CASING RECORD

CASING (REPORT ALL STRINGS SET IN WELL – CONDUCTOR, SURFACE, INTERMEDIATE, PRODUCING, ETC.

PURPOSE	SIZE HOLE DRILLED	SIZE CASING SET	WEIGHT (LB. FT)	DEPTH SET	SACKS CEMENT	AMOUNT PULLED
Surface	11 1/4	8 5/8"		20'	6	
Production	7 7/8	5 1/2"	15.5	101.75	unknown	

TUBING RECORD

SIZE	DEPTH SET	PACKER SET AT	SIZE
INCH	FEET	FEET	INCH

LINER RECORD

TOP	BOTTOM	SACKS CEMENT	SCREEN
FEET	FEET		FEET

PERFORATION RECORD

NUMBER PER FEET	SIZE AND TYPE	DEPTH INTERVAL
None		

ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD

AMOUNT AND KIND OF MATERIAL USED	DEPTH INTERVAL

INITIAL PRODUCTION

DATE OF FIRST PRODUCTION OR INJECTION	PRODUCING METHOD (INDICATE IF FLOWING, GAS LIFT, OR PUMPING – IF PUMPING, SHOW SIZE AND TYPE OF PUMP.)
None	

DATE OF TEST	HOURS TESTED	CHOKE SIZE	OIL PRODUCED DURING TEST BBLS	GAS PRODUCED DURING TEST MCF	WATER PRODUCED DURING TEST BBLS	OIL GRAVITY API (CORR.)

TUBING PRESSURE	CASING PRESSURE	CALCULATED RATE OF PRODUCTION PER 24 HOURS	OIL BBLS	GAS MCF	WATER BBLS	GAS OIL RATIO

DISPOSITION OF GAS (STATE WHETHER VENTED, USED FOR FUEL OR SOLD)

METHOD OF DISPOSAL OF MUD PIT CONTENTS

CERTIFICATE: I, the Undersigned, state that I am the agent of the Osborn Energy, LLC (Company), and that I am authorized by said company to make this report, and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

DATE	SIGNATURE
1/22/2010	Curtis Haubein

MO 780-0215 (09-01) (REV 9-01)

INSTRUCTIONS: Attach drillers log or other acceptable log of well.

* Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

DETAIL OF FORMATIONS PENETRATED

FORMATION	TOP	BOTTOM	DESCRIPTION (SEE * ABOVE)

Geo Report Attached

RECEIVED
JAN 25 2010
Mo Oil & Gas Council

Geological Report

Flanary #1-24-43-32
300 FEL, 300 FNL (N38° 30' 58", W94° 23' 59")
Section 24-T43N-R32W
Cass Co., Missouri
OGC #20736
Elevation: 836 GL (est. form Topo. Map)
Drilling Contractor: Glaze Drilling Co., (KS Lic. #5885)
Spud: 10/19/2003
Surface: 11 1/4" bore hole, set 20' of 8 5/8" csg. cmt'd with 6 sx
Production bore hole: 7 7/8"
Rotary Total Depth: 580'on 10/20/03
Drilling fluid: Air & Mist
E-Log Total Depth: 578' (Open Hole GR-N, 10/22/03)
Production Csg.: Used 5 ½" 15.50#/ft. set at 101.75' (bottom of packer)

Formation	Driller Log Tops	E-Log Tops	Datum
Stark Shale	Eroded away	----	----
Hushpuckney Shale	Eroded away	----	----
Base Kansas City	Eroded away	----	----
"Upper" Knobtown Sand	Eroded away	----	----
"Middle" Knobtown Sand	Eroded away	----	----
"Lower" Knobtown Sand	Eroded away	----	----
Carbonaceous Zone in Tacket Fm.	Eroded away	----	----
"Big Lake" Sand	Eroded away	----	----
South Mound Zone	29	29	807
Hepler (Wayside) Sand	Absent	----	----
"Upper" Mulberry Zone	No Call	----	----
Mulberry Zone	64	65	771
Weiser Sand	83	83	753
Myrick Station	99	99	737
Anna Shale (Lexington Coal Zone)	103	104	732
Peru Sand	Poorly Dev.	----	----
Summit Shale Zone	142	143	693
Mulky Coal/Shale Zone	160	161	675
"Upper" Squirrel Sand Zone	No Call	166	670
"Middle" Squirrel Sand Zone	176	177	659
"Lower" Squirrel Sand Zone	No Call	199	637
Bevier Zone	No Call	233	603
Verdigris (Ardmore)	234	236	600
Croweburg Zone	239	240	596
Mineral Coal Zone	273	311	525
Scammon Coal Zone	No Call	322	514
Tebo Coal Zone	No Call	346	490

Formation	Driller Log Tops	E-Log Tops	Datum
Bartlesville "A" Sand Zone	No Call	372	464
Bartlesville "B" Sand	394	396	440
Dry Wood Coal	Absent	----	----
Rowe Coal	Absent	----	----
Neutral Coal(s)	Absent	----	----
Riverton Coal	Absent	----	----
"F" (?) Sand	504	507	329
Mississippian	524	526	310
Rotary Total Depth	580	----	256
E-Log Total Depth	----	578	258

Note: Possible equivalent to what we have been calling the following:

Bevier Zone	276	(560)	This zone may be MO's "Wheeler"?
Verdigris (Ardmore)	283	(553)	
Croweburg Zone	286	(550)	

Major Zones of Interest (Depths based on Open Hole GR-N log measurements)

Note: Some basic abbreviations used in the following report.

T = Total gas readings in units
BG = Background gas in units
CH = Chromatograph readings in units
CG = Connection gas in units
GT = Open flow gas test (depths not corrected back to GR-N)

** Set up gas detector and equipment. "Zeroed" TGA & CH, attenuators on x4. T = 54.4 & CH = 33.2

South Mound Zone 29-32. Shale, black, very-very dark gray, angular cuttings, peppered in part with micro pyrite crystals, no show of free gas and no increase in gas units.

48' BG, T = 52.8 & CH = 22.8

"Upper" Mulberry Zone. Not developed. There was some carbonaceous material found in the 40-50 and 50-60 sample bags, but contained no shows of free gas and no increase in gas units. Log shows no coal or black shale.

55' BG, T = 52.4 & CH = 20.4

Mulberry Coal Zone, 65-67. Coal, "coaly-shale", abundant "floaters", trace black, very carbonaceous shale, none contained shows of free gas. No increase in gas units.

Laberdie Limestone, 68-83. Limestone from 73-78 was mottled cream - light grays - tans, micro to fine crystalline, poor crystalline with poor to fair pin-point vuggular porosity, no fluorescence, very-very weak odor, scattered shows of very dark brown to black oil where vuggular, no increase in gas units, does not merit further testing.

74' BG, T = 52 & CH = 16.8

77' BG, T = 51.2 & CH = 14

Note: At 80' BG, T = 50.4 & T = 12.8, "Re-zeroed" CH to read 53.2.

Weiser Sand, 83-86. Sample bag 80-90 contained; Shale, pale green, very silty to sandy, with dark tan to brown, very fine to medium grain, angular, poorly sorted, well consolidated, friable to semi firm, sandstone laminations, with weak odor, exhibited very dull to dull fluorescence, and contained very weak scattered shows of very dark brown free oil. There was no increase in gas units. This sand does not merit further testing.

86' BG, T = 51.2 & CH = 52.8

98' BG, T = 57.2 & CH = 51.2

Myrick Station Limestone, 99-104. Limestone, light to dark browns, fine to coarse crystalline, trace dolomitic, very poor to poor intercrystalline porosity, poor crystalline porosity where dolomitic, argillaceous and fossiliferous, no odor, no fluorescence, questionable stain, no other shows.

102' BG, T = 54.4 & CH = 48

Anna Shale (Lexington Coal Zone), 104-107. Shale, black, mostly blocky cuttings, peppered in part with pyrite, no show of free gas, trace coaly shale and coal, pyritic, no shows of free gas were found. The coal "floaters", which are normally coarse grain in size, were powder size.

108', "T" started increasing and peaked at 1480 units (1425.6 increase over BG)

115' BG, T = 1388 & CH = 55.6. Manually cycled CH, read 4776

117' CH auto cycled and read 2365.6

** 120' GT, open flowed 115 MCF

Note: Driller reported 10 to 20 gallons of water from Lexington in a 25 +/- minute period

120' after circulating for awhile, T = 222.4 & CH = 360

120' CG = 1170.4. CH auto cycled while CG climbing and read 8280

128' BG, T = 1636 & CH = 139.6. CH auto cycled and read 10,008

130' BG, T = 1572 & CH = 125.6

132' BG, T = 1486 & CH = 92.0

134' BG, T = 1451.6 & CH = 98.8

138' BG, T = 1428 & CH = 84.4

139' CH auto cycled and read 7592

** 140' GT, open flowing 115 MCF, no increase in gas or water.

140' BG after circulating for awhile, T = 1397.6

140' CG = 1764. CH auto cycled while CG rising and read 12928.

Summit Shale Zone, 143-146. Shale, very-very dark gray, black, angular to blocky cuttings, trace pyritic, trace laminated with calcareous material, fossiliferous in part, and contained no apparent shows of free gas or increase in gas units.

152' BG, T = 1450.8 & CH = 85.6

154' BG, T = 1437.2 & CH = 81.6

Mulky Shale/Coal Zone, 161-166. Shale, black, mostly angular cuttings, trace blocky, trace very "clayish" / "gummy", carbonaceous in part, trace pyritic, no apparent shows of free gas and no increase in gas units.

168' CH auto cycled read 7272

170' BG, T = 1368.8 & CH = 106.4

"Upper" Squirrel Sand Zone, 166-174. Siltstone/sandstone, pale green, trace dark tan, silt size to very fine grain, angular, poorly sorted, friable to semi firm, poor to trace fair intergranular porosity, questionable hydrocarbon staining.

"Middle" Squirrel Sand Zone, 177-195. Siltstone/sandstone, as above with tan to light brown, fine grain, moderately sorted, friable, fair to good porosity, thin sandstone lamina, with a sheen to rainbow show of oil on most sand clusters, no to questionable odor, and no fluorescence.

179' BG, T = 1374.8 & CH = 74.4

** 180' GT, open flowing 115, no increase in gas or water.

180' BG, T = 1379.2 & CH = 60 after circulating for awhile

180' CG = 1757.6

183' CH auto cycled and read 7340

191' BG, T = 1341.6 & CH = 68.8

196' BG, T = 1338.8 & CH = 60

"Lower" Squirrel Sand Zone, 199-206. Sandstone, light grayish tan, fine grain, angular to very angular, poor to moderately sorted, semi firm, poor to fair porosity, scattered shaly to silty lamina, weak odor, scattered very-very dull fluorescence, speckled shows of dark brown free oil and black hydrocarbon residue.

200' BG, T = 1322.4 & CH = 58.4

** 200' GT, open flowing between 94-100 MCF, loss of b/w 21 to 15 MCF, and no increase in water.

200' CG = 1756.8

202' CH auto cycled and read 7172

206-219. Sandstone as above maybe a little more gray tinted, trace sand clusters with medium grains, trace carbonaceous fragments, same show as noted above.

208' BG, T = 1374.8 & CH = 61.2

214' BG, T = 1366.4 & CH = 55.2

218' BG, T = 1366.4 & CH = 61.2

221-230. Sandstone, light gray, fine to medium grain, angular to very angular, poor to moderately sorted, well consolidated, firm, poor to fair intergranular porosity, trace carbonaceous, trace micaceous weak odor, speckled to spotty shows of very dark brown free oil.

220' BG, T = 1339.6 & CH = 48.8

220' CG = 1752.4

227' CH auto cycled and read 6931.6

228' BG, T = 1365.6 & CH = 92.0

"True" Bevier Coal Zone, 233-234. Sample bag 230-240 contained the following, other than shale, trace sandstone as above, limestone fragments, and "coaly-shale". No shows of gas were observed, and possible very slight increase in gas units, 16 units for T & 12.8 units for CH. Zone contains between 1 to 1.25' of coal and "coaly-shale"

236' BG, T = 1336.8 & CH = 49.6

239' BG, T = 1352.8 & CH = 62.4

240' CG = 1748

"True" Croweburg Zone, 240-250+. No coal or carbonaceous black shale was found in the drill cuttings collected. Log shows no development.

249' BG, T = 1359.2 & CH = 38.0

260' CG = 1739.2

261' BG, T = 1317.6 & CH = 46.8

266' BG, T = 1358.8 & CH = 48.0

270' BG, T = 1341.6 & CH = 40.8

274' BG, T = 1432 & CH = 44.8

"Our Bevier" (MO's Wheeler?) Coal Zone, 276-278. Coal and "coaly-shale", few "floaters", fractured in part with secondary crystalline growth, trace pyritic, none exhibited shows of free gas. Had a 90.4 unit gas kick.

276' CH auto cycled and read 6872

279' BG, T = 1302.4 & CH = 50.8

280' CG = 1747.2

280', CH auto cycled and read 7584, caught part of CG

"Our Croweburg Zone 286-289. No Coal

290' BG, T = 1343.6 & CH = 47.6

294' BG, T = 1340.8 & CH = 48.0

300' BG, (after circulating for awhile) T = 1304.4 & CH = 33.2

300' CG = 1342.4

308' BG, T = 1333.2 & CH = 32.0

Mineral Coal Zone, 311-313. Shale, black, block to trace platy cuttings, pyritic in part, no shows of free gas.

314' BG, T = 1334.4 & CH = 44.4

313-315. Coal and "coaly-shale", 6% of coal in sample were "floaters", trace fractured with secondary crystallization, trace pyritic, no shows of free gas were found and no appreciable increase in gas units.

320' CH auto cycled and read 6928

Scammon Coal Zone 322-324. No coal in samples, trace black shale.

320' BG (after circulating for awhile) T = 1273.6 & CH = 28.8

320' CG = 1342.4

327' BG, T = 1330.8 & CH = 45.2

329' BG, T = 1337.6 & CH = 41.6

333' BG, T = 1317.6 & CH = 56.4

337' BG, T = 1313.6 & CH = 44.0

340' BG, T = 1300.4 & CH = 51.2

340' CG = 1480.4

Tebo Coal Zone, 346-358.

346-350. Shale, dark to very dark gray, black, blocky with trace platy cuttings, pyritic in part, no show of free gas.

349' BG, T = 1343.2 & CH = 46.8

350-353. Coal and "coaly-shale", fair to good percentage of coal in sample were "floaters", abundant pyrite, only about a half dozen or so of the "coaly-shale" exhibited a very-very weak show of free gas.

353-358. Shale, black, mostly blocky cuttings, trace dark gray shale with carbonaceous fragments, abundant pyrite in sample, no show of free gas.

360' BG, T = 1349.6 & CH = 33.6

360' CG = 1738.8

Note: Although there was not a significant increase in gas units while drilling through the Tebo Zone, there was an increase between 340's and 360's connection gas of 258.4 units. This CG stayed fairly constant to the total depth of the subject well, but without further evidence, cannot recommend the Tebo be tested separately at this time.

Bartlesville "A" Sand Zone, 372-378. Shale gray, very silty to very sandy, very laminated with white, very fine to fine grain, sub-angular, moderately sorted, well consolidated, firm, poor porosity, sandstone with no shows.

380' BG, T = 1264.8 & CH = 36.0

380' CH auto cycled and read 6069.2

380' CG = 1742

"Un-named" Coal Zone, 392-393. No "clean" coal or coaly-shale was found in the drill cuttings collected. There was some carbonaceous material, but contained no shows of free gas. No increase in gas units.

Bartlesville "B" Sand, 396-401. Sandstone, very-very light gray, white, somewhat "salt and pepper" appearance, very fine to medium grain, mostly fine grain, angular to very angular, poorly sorted, well consolidated, friable to semi-firm, fair with trace good porosity, scattered carbonaceous and micaceous fragments in most sand clusters, no show.

397' CH auto cycled and read 6581.6

398' BG, T = 1257.6 & CH = 28.4

** 400', GT, open flowing 94 MCF, no increase in gas or water

400' CG = 1744.4

400' CH auto cycled and read 14,804.0, increase created by the CG.

401' BG, T = 1254.8 & CH = 26.4

418' BG, T = 1264.8 & CH = 41.6

420' BG, T = 1258 & CH = 38.8

420' CG = 1736.0

432' BG, T = 1220.4 & CH = 31.6

434' CH auto cycled and read 6264.0

Dry Wood, Rowe, Neutral(s), and Riverton Coal Zones are absent.

440' BG, T = 1192.8 & CH = 47.6

440' CG = 1742.8

452' BG, T = 1220.4 & CH = 34.0

458' BG, T = 1189.6 & CH = 38.4

460' BG, T = 1180 & CH = 41.6

460' CG = 1486

468' BG, T = 1227.6 (did not quite get all CG out before drilling ahead) & CH = 32.4

472' BG, T = 1197.6 & CH = 20.4

480' CG = 1742.8

493' BG, T = 1192.4 & CH = 32.4

496' BG, T = 1177.6 & CH = 17.6

500' BG, T = 1165.6 & CH = 24.8

500' CH auto cycled and read 5964, T was at 287 at the time.

500' CG = 1618

"F" ("G" ?) Sand, 507-521. Sandstone, white, becoming grayish with depth, fine trace medium grain, sub-angular to angular, poorly sorted, well consolidated, semi firm to firm, poor trace fair intergranular porosity, laminated in part with carbonaceous material, no show. "Clean" sand at 507, silty/shaly sand starts at 503.

508' BG, T = 1138.8 & CH = 25.2

515' BG, T = 1123.2 & CH = 19.6

520' CG = 1740.4

Mississippian Conglomerate, 521-526. Sandstone as above, but a little more gray, shaly and laminated, trace weathered chert and limestone fragments.

Mississippian, 526-535. Limestone, tan to very dark cream, micro crystalline, dense, trace silty to slightly sandy pale green to aqua marine shale.

535' CH auto cycled and read 5529.6

535-556. Limestone, mottled light tans, abundant coarse grain size fossil fragments in a microcrystalline matrix, poor to very poor crystalline porosity, no show. Limestone appeared to be "re-worked".

536' BG, T = 1085.2 & CH = 23.6

538' BG, T = 1068.4 & CH = 45.2

540' CG = 1744.8

542' BG, T = 1080.8 & CH = 30.8

542' CH auto cycled and read 5974.4

544' BG, T = 1109.2 & CH = 47.6

545' BG, T = 1096.8 & CH = 46.0

554' BG, T = 1068.8 & CH = 55.2

556-576. Shale, light gray, dull/pale greens, dense, very-very slightly calcareous, somewhat gritty textured in part, and becomes very pyritic with depth.

560' CH auto cycled and read 5128

560' CG = 1745.2

561' CH auto cycled and read 12,648.0, caught part of CG

568' BG, T = 1162.4 & CH = 77.6

573' BG, T = 1092.8 & CH = 73.6

575' BG, T = 1358 & CH = 83.2

037-20736

Draft

Geological Report

Flanary #1-24-43-32
300 FEL, 300 FNL (N38° 30' 58", W94° 23' 59")
Section 24-T43N-R32W
Cass Co., Missouri
OGC #20736
Elevation: 836 GL (est. form Topo. Map)
Drilling Contractor: Glaze Drilling Co., (KS Lic. #5885)
Spud: 10/19/2003
Surface: 11 1/4" bore hole, set 20' of 8 5/8" csg. cmt'd with 6 sx
Production bore hole: 7 7/8"
Rotary Total Depth: 580'on 10/20/03
Drilling fluid: Air & Mist
E-Log Total Depth: 578' (Open Hole GR-N, 10/22/03)
Production Csg.: Used 5 ½" 15.50#/ft. set at 101.75' (bottom of packer)

Formation	Driller Log Tops	E-Log Tops	Datum
Stark Shale	Eroded away	----	----
Hushpuckney Shale	Eroded away	----	----
Base Kansas City	Eroded away	----	----
"Upper" Knobtown Sand	Eroded away	----	----
"Middle" Knobtown Sand	Eroded away	----	----
"Lower" Knobtown Sand	Eroded away	----	----
Carbonaceous Zone in Tacket Fm.	Eroded away	----	----
"Big Lake" Sand	Eroded away	----	----
South Mound Zone	29	29	807
Hepler (Wayside) Sand	Absent	----	----
"Upper" Mulberry Zone	No Call	----	----
Mulberry Zone	64	65	771
Weiser Sand	83	83	753
Myrick Station	99	99	737
Anna Shale (Lexington Coal Zone)	103	104	732
Peru Sand	Poorly Dev.	----	----
Summit Shale Zone	142	143	693
Mulky Coal/Shale Zone	160	161	675
"Upper" Squirrel Sand Zone	No Call	166	670
"Middle" Squirrel Sand Zone	176	177	659
"Lower" Squirrel Sand Zone	No Call	199	637
Bevier Zone	No Call	233	603
Verdigris (Ardmore)	234	236	600
Croweburg Zone	239	240	596
Mineral Coal Zone	273	311	525
Scammon Coal Zone	No Call	322	514
Tebo Coal Zone	No Call	346	490

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Formation	Driller Log Tops	E-Log Tops	Datum
Bartlesville "A" Sand Zone	No Call	372	464
Bartlesville "B" Sand	394	396	440
Dry Wood Coal	Absent	----	----
Rowe Coal	Absent	----	----
Neutral Coal(s)	Absent	----	----
Riverton Coal	Absent	----	----
"F" (?) Sand	504	507	329
Mississippian	524	526	310
Rotary Total Depth	580	----	256
E-Log Total Depth	----	578	258

Note: Possible equivalent to what we have been calling the following:

Bevier Zone	276	(560)	This zone may be MO's "Wheeler"?
Verdigris (Ardmore)	283	(553)	
Croweburg Zone	286	(550)	

Major Zones of Interest (Depths based on Open Hole GR-N log measurements)

Note: Some basic abbreviations used in the following report.

T = Total gas readings in units
BG = Background gas in units
CH = Chromatograph readings in units
CG = Connection gas in units
GT = Open flow gas test (depths not corrected back to GR-N)

** Set up gas detector and equipment. "Zeroed" TGA & CH, attenuators on x4. T = 54.4 & CH = 33.2

South Mound Zone 29-32. Shale, black, very-very dark gray, angular cuttings, peppered in part with micro pyrite crystals, no show of free gas and no increase in gas units.

48' BG, T = 52.8 & CH = 22.8

"Upper" Mulberry Zone. Not developed. There was some carbonaceous material found in the 40-50 and 50-60 sample bags, but contained no shows of free gas and no increase in gas units. Log shows no coal or black shale.

55' BG, T = 52.4 & CH = 20.4

Mulberry Coal Zone, 65-67. Coal, "coaly-shale", abundant "floaters", trace black, very carbonaceous shale, none contained shows of free gas. No increase in gas units.

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Laberdie Limestone, 68-83. Limestone from 73-78 was mottled cream - light grays - tans, micro to fine crystalline, poor crystalline with poor to fair pin-point vuggular porosity, no fluorescence, very-very weak odor, scattered shows of very dark brown to black oil where vuggular, no increase in gas units, does not merit further testing.

74' BG, T = 52 & CH = 16.8

77' BG, T = 51.2 & CH = 14

Note: At 80' BG, T = 50.4 & T = 12.8, "Re-zeroed" CH to read 53.2.

Weiser Sand, 83-86. Sample bag 80-90 contained; Shale, pale green, very silty to sandy, with dark tan to brown, very fine to medium grain, angular, poorly sorted, well consolidated, friable to semi firm, sandstone laminations, with weak odor, exhibited very dull to dull fluorescence, and contained very weak scattered shows of very dark brown free oil. There was no increase in gas units. This sand does not merit further testing.

86' BG, T = 51.2 & CH = 52.8

98' BG, T = 57.2 & CH = 51.2

Myrick Station Limestone, 99-104. Limestone, light to dark browns, fine to coarse crystalline, trace dolomitic, very poor to poor intercrystalline porosity, poor crystalline porosity where dolomitic, argillaceous and fossiliferous, no odor, no fluorescence, questionable stain, no other shows.

102' BG, T = 54.4 & CH = 48

Anna Shale (Lexington Coal Zone), 104-107. Shale, black, mostly blocky cuttings, peppered in part with pyrite, no show of free gas, trace coaly shale and coal, pyritic, no shows of free gas were found. The coal "floaters", which are normally coarse grain in size, were powder size.

108', "T" started increasing and peaked at 1480 units (1425.6 increase over BG)

115' BG, T = 1388 & CH = 55.6. Manually cycled CH, read 4776

117' CH auto cycled and read 2365.6

** 120' GT, open flowed 115 MCF

Note: Driller reported 10 to 20 gallons of water from Lexington in a 25 +/- minute period

120' after circulating for awhile, T = 222.4 & CH = 360

120' CG = 1170.4. CH auto cycled while CG climbing and read 8280

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128' BG, T = 1636 & CH = 139.6. CH auto cycled and read 10,008

130' BG, T = 1572 & CH = 125.6

132' BG, T = 1486 & CH = 92.0

134' BG, T = 1451.6 & CH = 98.8

138' BG, T = 1428 & CH = 84.4

139' CH auto cycled and read 7592

** 140' GT, open flowing 115 MCF, no increase in gas or water.

140' BG after circulating for awhile, T = 1397.6

140' CG = 1764. CH auto cycled while CG rising and read 12928.

Summit Shale Zone, 143-146. Shale, very-very dark gray, black, angular to blocky cuttings, trace pyritic, trace laminated with calcareous material, fossiliferous in part, and contained no apparent shows of free gas or increase in gas units.

152' BG, T = 1450.8 & CH = 85.6

154' BG, T = 1437.2 & CH = 81.6

Mulky Shale/Coal Zone, 161-166. Shale, black, mostly angular cuttings, trace blocky, trace very "clayish" / "gummy", carbonaceous in part, trace pyritic, no apparent shows of free gas and no increase in gas units.

168' CH auto cycled read 7272

170' BG, T = 1368.8 & CH = 106.4

"Upper" Squirrel Sand Zone, 166-174. Siltstone/sandstone, pale green, trace dark tan, silt size to very fine grain, angular, poorly sorted, friable to semi firm, poor to trace fair intergranular porosity, questionable hydrocarbon staining.

"Middle" Squirrel Sand Zone, 177-195. Siltstone/sandstone, as above with tan to light brown, fine grain, moderately sorted, friable, fair to good porosity, thin sandstone lamina, with a sheen to rainbow show of oil on most sand clusters, no to questionable odor, and no fluorescence.

179' BG, T = 1374.8 & CH = 74.4

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** 180' GT, open flowing 115, no increase in gas or water.

180' BG, T = 1379.2 & CH = 60 after circulating for awhile

180' CG = 1757.6

183' CH auto cycled and read 7340

191' BG, T = 1341.6 & CH = 68.8

196' BG, T = 1338.8 & CH = 60

"Lower" Squirrel Sand Zone, 199-206. Sandstone, light grayish tan, fine grain, angular to very angular, poor to moderately sorted, semi firm, poor to fair porosity, scattered shaly to silty lamina, weak odor, scattered very-very dull fluorescence, speckled shows of dark brown free oil and black hydrocarbon residue.

200' BG, T = 1322.4 & CH = 58.4

** 200' GT, open flowing between 94-100 MCF, loss of b/w 21 to 15 MCF, and no increase in water.

200' CG = 1756.8

202' CH auto cycled and read 7172

206-219. Sandstone as above maybe a little more gray tinted, trace sand clusters with medium grains, trace carbonaceous fragments, same show as noted above.

208' BG, T = 1374.8 & CH = 61.2

214' BG, T = 1366.4 & CH = 55.2

218' BG, T = 1366.4 & CH = 61.2

221-230. Sandstone, light gray, fine to medium grain, angular to very angular, poor to moderately sorted, well consolidated, firm, poor to fair intergranular porosity, trace carbonaceous, trace micaceous weak odor, speckled to spotty shows of very dark brown free oil.

220' BG, T = 1339.6 & CH = 48.8

220' CG = 1752.4

227' CH auto cycled and read 6931.6

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228' BG, T = 1365.6 & CH = 92.0

"True" Bevier Coal Zone, 233-234. Sample bag 230-240 contained the following, other than shale, trace sandstone as above, limestone fragments, and "coaly-shale". No shows of gas were observed, and possible very slight increase in gas units, 16 units for T & 12.8 units for CH. Zone contains between 1 to 1.25' of coal and "coaly-shale"

236' BG, T = 1336.8 & CH = 49.6

239' BG, T = 1352.8 & CH = 62.4

240' CG = 1748

"True" Croweburg Zone, 240-250+. No coal or carbonaceous black shale was found in the drill cuttings collected. Log shows no development.

249' BG, T = 1359.2 & CH = 38.0

260' CG = 1739.2

261' BG, T = 1317.6 & CH = 46.8

266' BG, T = 1358.8 & CH = 48.0

270' BG, T = 1341.6 & CH = 40.8

274' BG, T = 1432 & CH = 44.8

"Our Bevier" (MO's Wheeler?) Coal Zone, 276-278. Coal and "coaly-shale", few "floaters", fractured in part with secondary crystalline growth, trace pyritic, none exhibited shows of free gas. Had a 90.4 unit gas kick.

276' CH auto cycled and read 6872

279' BG, T = 1302.4 & CH = 50.8

280' CG = 1747.2

280', CH auto cycled and read 7584, caught part of CG

"Our Croweburg Zone 286-289. No Coal

290' BG, T = 1343.6 & CH = 47.6

294' BG, T = 1340.8 & CH = 48.0

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300' BG, (after circulating for awhile) T = 1304.4 & CH = 33.2

300' CG = 1342.4

308' BG, T = 1333.2 & CH = 32.0

Mineral Coal Zone, 311-313. Shale, black, block to trace platy cuttings, pyritic in part, no shows of free gas.

314' BG, T = 1334.4 & CH = 44.4

313-315. Coal and "coaly-shale", 6% of coal in sample were "floaters", trace fractured with secondary crystallization, trace pyritic, no shows of free gas were found and no appreciable increase in gas units.

320' CH auto cycled and read 6928

Scammon Coal Zone 322-324. No coal in samples, trace black shale.

320' BG (after circulating for awhile) T = 1273.6 & CH = 28.8

320' CG = 1342.4

327' BG, T = 1330.8 & CH = 45.2

329' BG, T = 1337.6 & CH = 41.6

333' BG, T = 1317.6 & CH = 56.4

337' BG, T = 1313.6 & CH = 44.0

340' BG, T = 1300.4 & CH = 51.2

340' CG = 1480.4

Tebo Coal Zone, 346-358.

346-350. Shale, dark to very dark gray, black, blocky with trace platy cuttings, pyritic in part, no show of free gas.

349' BG, T = 1343.2 & CH = 46.8

350-353. Coal and "coaly-shale", fair to good percentage of coal in sample were "floaters", abundant pyrite, only about a half dozen or so of the "coaly-shale" exhibited a very-very weak show of free gas.

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353-358. Shale, black, mostly blocky cuttings, trace dark gray shale with carbonaceous fragments, abundant pyrite in sample, no show of free gas.

360' BG, T = 1349.6 & CH = 33.6

360' CG = 1738.8

Note: Although there was not a significant increase in gas units while drilling through the Tebo Zone, there was an increase between 340's and 360's connection gas of 258.4 units. This CG stayed fairly constant to the total depth of the subject well, but without further evidence, cannot recommend the Tebo be tested separately at this time.

Bartlesville "A" Sand Zone, 372-378. Shale gray, very silty to very sandy, very laminated with white, very fine to fine grain, sub-angular, moderately sorted, well consolidated, firm, poor porosity, sandstone with no shows.

380' BG, T = 1264.8 & CH = 36.0

380' CH auto cycled and read 6069.2

380' CG = 1742

"Un-named" Coal Zone, 392-393. No "clean" coal or coaly-shale was found in the drill cuttings collected. There was some carbonaceous material, but contained no shows of free gas. No increase in gas units.

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556-576. Shale, light gray, dull/pale greens, dense, very-very slightly calcareous, somewhat gritty textured in part, and becomes very pyritic with depth.

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568' BG, T = 1162.4 & CH = 77.6

573' BG, T = 1092.8 & CH = 73.6

575' BG, T = 1358 & CH = 83.2

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576' BG, T = 1068.4 & CH = 78.4

Note: Slight increases in gas units from shale in Mississippi, but do not believe worth further testing at this time.

576-580. Limestone, brown, fine to medium crystalline, dolomitic in part, very poor to trace fair porosity, trace chert, trace very dark gray and black, gritty to somewhat silty textured, fossiliferous shale, no show.

578' BG, T = 1074.8 & CH = 52.8

580' BG, T = 1074.4 & CH = 53.6

580' GT, open flowing 94 MCF, no increase in gas or water.

Brief Summary:

South Mound	No open flow, no water
Mulberry(s)	No open flow, no water
Lexington	115 MCF "10 to 20 gallons / 1/2 hour"
Summit	No open flow, no increase in water
Mulky	No open flow, no apparent increase water
Squirrel	No open flow, show of oil, non-commercial
Mineral	No open flow, no increase in water
Scammon	No open flow, no increase in water
Tebo	No open flow, no increase in water
Bartlesville Sand(s)	No open flow, no apparent increase in water
Mississippi	No open flow, no apparent increase in water
Total	115 MCF

** Structural comparison of the subject well using the Top of the Lexington Zone:

Flanary #1-24	Pelton #1	Cotterman #1
733	726 +/-	689 +/-

Note: Will need to do further research on the geology of the area to determine if Bevier, Verdigris (Ardmore), and Croweburg need correcting to our Kansas work.

End Report

Rex R. Ashlock